Technical Memo

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To: Geoff Strack, P.E., Waste Connections

From: Brad Sullivan, P.E., Wenck Associates, Inc.

Date: January 9, 2020

Subject: SKB Rosemount Industrial Waste Facility
2019 Annual CCR Inspection Report
Wenck Project #B3053-0180

I hereby certify that this engineering document was prepared by me or under my direct supervision and that I am a duly registered Professional Engineer under the laws of the State of Minnesota.

Bradley W Sullivan
January 9, 2020 PE # 56502

Purpose

This memorandum fulfills the requirements of 40 CFR § 257.84 Inspection Requirements for coal combustion residue (CCR) Surface Landfills, Part b, regarding an annual inspection by a qualified professional engineer.

Background and Applicability

SKB Environmental, Inc. owns and operates the SKB Rosemount Industrial Waste Facility (the Landfill or Facility herein), an industrial waste disposal facility operating under MPCA Solid Waste Permit SW-383, originally issued in January of 1992.

The site is located on a 236-acre parcel in Sections 19, 20 and 25 of Township 115 North, Range 18 West, in the City of Rosemount, Minnesota, which is in Dakota County. The site is located between Minnesota State Highway 55 (aka Courthouse Boulevard) and Dakota County Road 38, and is accessed via 13425 Courthouse Boulevard, Rosemount, MN 55068.

There are 6 permitted disposal cells in the Landfill. Operating records indicate that CCR Material is contained in Cells 1, 2 and 3. See Figure 1 for a facility site plan.

CCR Landfill Inspection (40 CFR § 257.84)

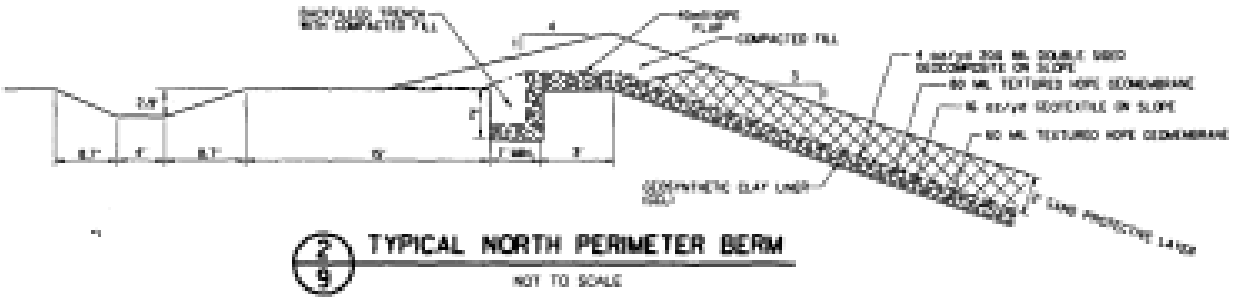
On November 6, 2019, Mr. Geoff Strack, P.E. of Waste Connections and Mr. Brad Sullivan, P.E., of Wenck conducted the on-site inspection of the CCR Landfill. As part of the inspection, the following operating and inspection records were reviewed:

- Review of weekly visual CCR inspections performed by landfill operators;
- Previous annual inspections performed by a licensed professional engineer;
- CCR unit design and construction information required by § 257.73(c)(1); and
- Previous periodic structural stability assessments required under § 257.73(d).

It should be noted that §257.74 does not apply as the site is not new, nor is it a lateral expansion of an existing impoundment/landfill, therefore this is not addressed.

Landfill Cell Design

In general, most of the facility's landfill cell embankments were constructed using granular borrow material, which consisted of silty clay and clayey sand type soils. The fill was placed and compacted to 95% of Standard Proctor Dry Density in lift thicknesses ranging from 8 inches to 12 inches. The final subgrade surface was proof rolled prior to geosynthetics installation. A typical perimeter section taken from the Cell 3A Construction Documentation Report prepared by Foth & Van Dyke dated October 2005 is shown below.



During the inspection, no signs of landfill cell embankment distress or waste slope instability were observed and no other CCR landfill issues were noted. The landfill embankments and interim covered slopes were generally in good condition with a well-established vegetation cover and no signs of significant erosion.

Photos of the landfill embankments and waste slopes were taken during the inspection. Figure 1 presents the photo locations, and Attachment 1 contains a photo log from the inspections.

CCR Landfill Inspection Report

40 CFR § 257.84, Subpart b.2 requires the following topics in italics be addressed within this report. The requirements are shown in italics with the response immediately afterwards for each item.

(i) Any changes in geometry of the impounding structure since the previous annual inspection;

Construction of Cell 3F was completed in December 2018 and became operational in January 2019. Cell 3F was partially constructed during the 2018 CCR inspection. Cell 3F's design entails an overlay liner connected to the southwestern anchor trench of Cells 2D, 3A, and 3C, and is constructed over the top of Cells 5A, B, and C. Other than the excavate toe of the waste slope, the southwestern waste slope was substantially unchanged from the previous annual inspection, other than the active filling area.

Since the previous annual CCR inspection, the outer northwestern waste slopes of Cell 3E have been substantially filled. Cell 3E is the valley fill between Cell 1 and Cell 2A and is located along on the northwestern anchor trench. Cell 3E's waste slopes have been filled to match the adjacent cell's waste slopes. The northwestern landfill anchor trench and embankment are otherwise unchanged from the previous annual CCR inspection.

There were no other apparent changes to the embankment geometry of any other landfill cell when compared to the permit drawings or the past inspection reports.

The annual aerial photogrammetry survey was performed on October 17, 2019 which the estimated in-place volume is based on. A comparison of the 2019 and 2018 aerial surveys confirm that the embankment and slope topography is substantially unchanged with no significant movement. The 2019 aerial survey is included as Figure 2.

(ii) The approximate volume of CCR contained in the unit at the time of the inspection;

The approximate volume of CCR material contained in the landfill at the time of the inspection is 633,400 cubic yards.

(iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and

None of the following were observed that could indicate structural weakness;

- Signs of slumping or rotational movement;
- Lateral or vertical distortion of the embankment crest;
- Seepage on the outboard slope; or
- Borrowing or damage due to vectors.

(iv) Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

There were no changes noted that may could potentially affect the stability or operation of the impoundment. Observations were consistent with those noted in that report.

Notification Requirements

The SKB Rosemount Industrial Waste Landfill is in compliance with the recordkeeping requirements specified in § 257.105(g), the notification requirements specified in § 257.106(g), and the internet requirements specified in § 257.107(g.

Conclusions and Recommendations

It is recommended that the trees rooted in the southern perimeter berms be monitored as part of future annual inspections. Observations requiring action would be signs of the tops of the trees leaning away from the slope. This leaning can cause concentrated stresses in the slope that, in some cases, can induce slumping of the slope's fill materials. All other recommendations presented in the previous inspection report were implemented.

The SKB Rosemount Landfill facility has been constructed in operated in accordance with the facility permit and the CCR regulations. No embankment or waste slope stability issues were observed during the visual inspection.

40 CFR § 257.83, Subpart b.5 and 40 CFR § 257.84, Subpart b.5 each require that if a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken. There were no deficiencies or releases related to CCR operations identified during the inspection.

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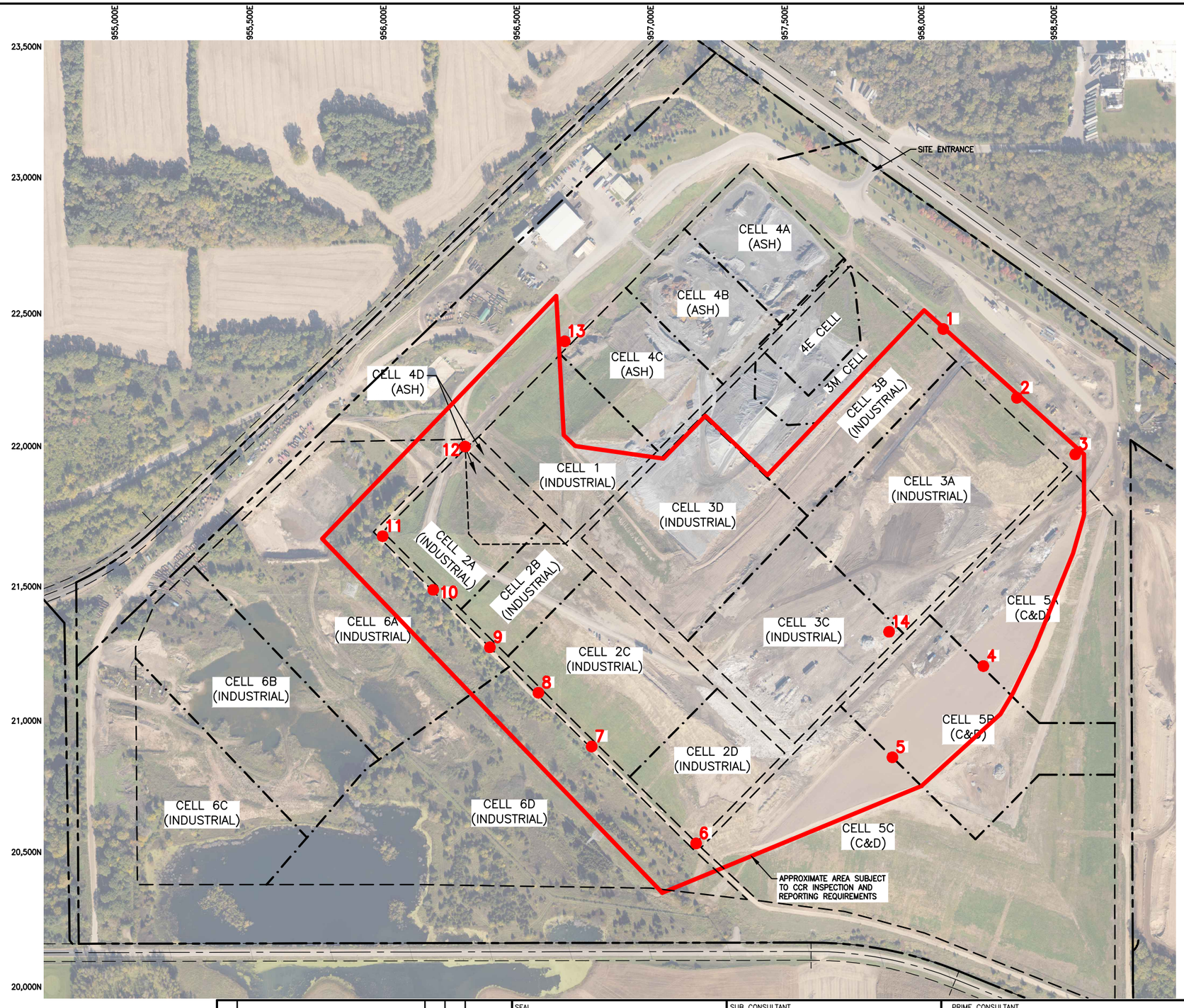

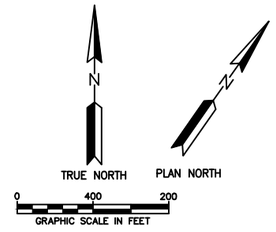

LEGEND

● PHOTO LOCATIONS

NOTE:
BASE MAPPING HAS BEEN UPDATED BY AERIAL SURVEY PROVIDED BY CONTINENTAL MAPPING COMPLETED ON OCTOBER 17, 2019.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

SEAL

SUB CONSULTANT

PRIME CONSULTANT

WENCK ASSOCIATES

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1800 PIONEER CREEK CENTER 763-479-4242
MAPLE PLAIN, MINNESOTA 763-749-4200

PROJECT TITLE
2019 CCR INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
PHOTO LOCATIONS

DWN BY	CHK'D	APP'D	DWG DATE	JAN. 2020
BWS	TJS	BWS	SCALE	AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
3053-0180	FIGURE 1	0

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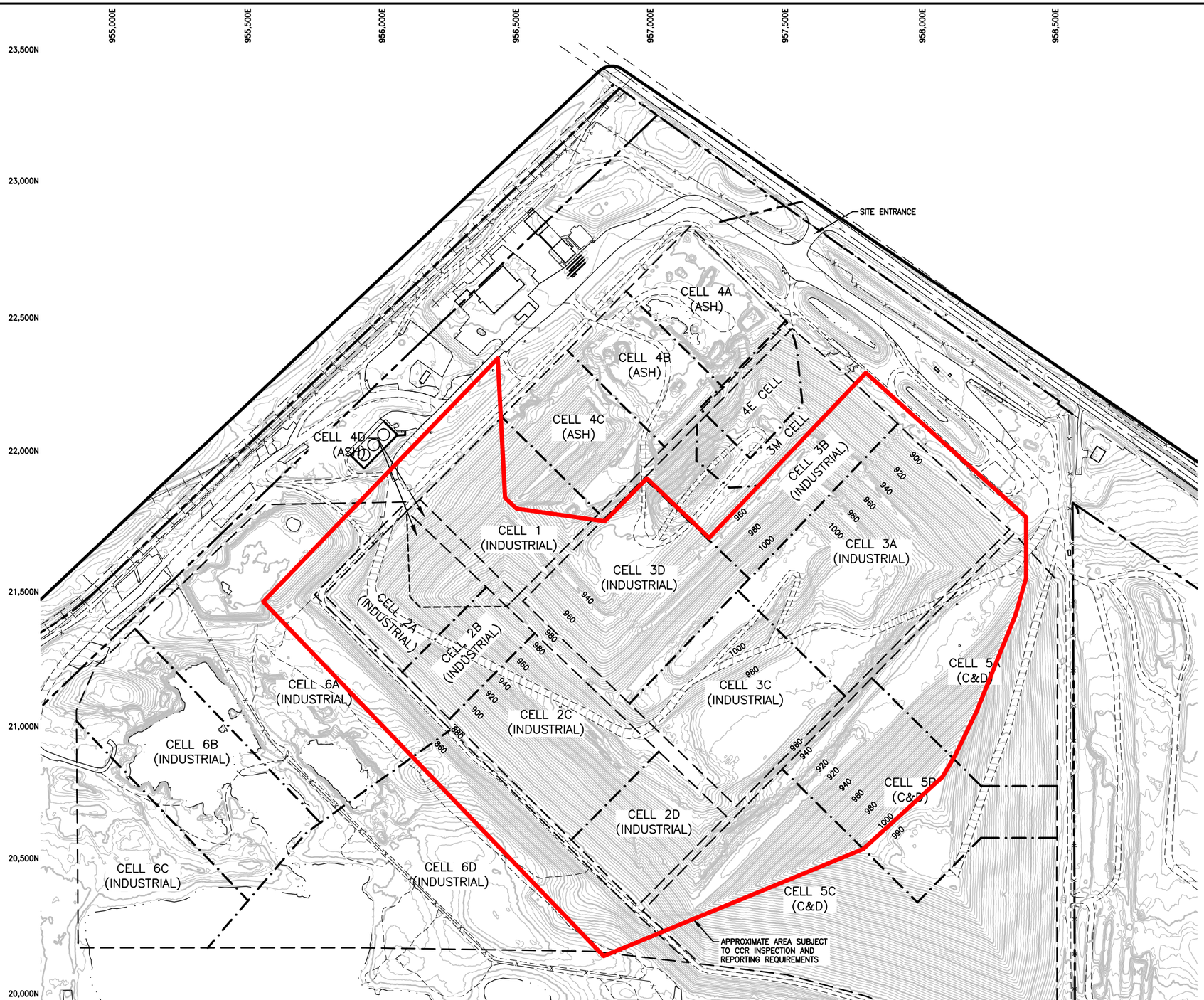
Plot Date & Time: 15 January 2020 2:43 PM



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MAPLE PLAIN, MINNESOTA 763-749-4200

PROJECT TITLE
2019 CCR INSPECTION REPORT

SKB ROSEMOUNT LANDFILL
ROSEMOUNT, MINNESOTA

SHEET TITLE
SITE MAP

DWN BY	CHK'D	APP'D	DWG DATE
BWS	TJS	BWS	JAN. 2020

SCALE AS NOTED

PROJECT NO.	SHEET NO.	REV NO.
3053-0180	FIGURE 2	0

M:\3053\Rosemount\2019 CCR Report\cix\cad\figure 2 Site Map.dwg

Photo 1: Location 1 – Looking Southeast, Cell 3A & 3B Waste Slope & Anchor Trench

Photo 2: Location 1 – Looking Northwest, Cell 3 Berm

Photo 3: Location 2 – Looking Northwest, Cell 3 Berm & Stormwater Pond

Photo 4: Location 2 – Looking Northwest, Cell 3 Anchor Trench and Waste Slope

Photo 5: Location 2 – Looking Southeast, Phase 3A Anchor Trench and Northeastern Waste Slope

Photo 6: Location 3 – Looking Northwest, Phase 3A Anchor Trench and Northeastern Waste Slope

Photo 7: Location 3 – Looking West, Phase 3 East Corner & Interior Access Road

Photo 8: Location 4 – Looking Northeast, Phase 3F Liner Limit

Photo 9: Location 4 – Looking Southwest, Phase 3F Liner Limit

Photo 10: Location 5 – Looking Southwest, Phase 3F Liner Limit

Photo 11: Location 5 – Looking Southwest, Phase 3F Liner Limit

Photo 12: Location 6 – Looking Northeast, Southeastern Slope, Anchor Trench & New Liner Construction

Photo 13: Location 6 – Looking Northwest, Cell 2D Southwestern Slope and Perimeter Road

Photo 14: Location 6 – Looking North, Cell 2D Berm

Photo 15: Location 7 – Looking Southeast, Cell 2D Southwestern Slope, Anchor Trench, and Road

Photo 16: Location 7 – Looking Southeast, Cell 2D Berm

Photo 17: Location 7 – Looking Northwest, Cell 2C Southwestern Slope, Anchor Trench, and Road

Photo 18: Location 7 – Looking Northwest, Cell 2C Cell 2C Southwestern Berm

Photo 19: Location 8 – Looking Southwest, Cell 2C Southwestern Berm

Photo 20: Location 8 – Looking Southwest, Cell 2C Southwestern Waste Slope and Anchor Trench

Photo 21: Location 8 – Looking Northwest, Cell 2C & 2B Southwestern Waste Slope and Anchor Trench

Photo 22: Location 9 – Looking Southeast, Cell 2C Southwestern Waste Slope and Anchor Trench

Photo 23: Location 9 – Looking Southeast, Cell 2C Southwestern Berm

Photo 24: Location 9 – Looking Northwest, Cell 2B Southwestern Waste Slope and Anchor Trench

Photo 25: Location 9 – Looking Northwest, Cell 2B Southwestern Berm

Photo 26: Location 10 – Looking Northwest, Cell 2A Southwestern Berm

Photo 27: Location 10 – Looking Southeast, Cell 2B Southwestern Berm

Photo 28: Location 10 – Looking Northwest, Cell 2A Southwestern Waste Slope and Perimeter Road

Photo 29: Location 10 – Looking Southeast, Cell 2B Southwestern Waste Slope and Perimeter Road

Photo 30: Location 11 – Looking Southeast, Cell 2A Southwestern Berm

Photo 31: Location 11 – Looking Southeast, Cell 2A Southwestern Waste Slope

Photo 32: Location 11 – Looking Northeast, Cell 2A Northwestern Berm

Photo 33: Location 11 – Looking Northeast, Cell 2A Northwestern Perimeter Road and Anchor Trench

Photo 34: Location 12 – Looking Southwest, Cell 2A Northwestern Berm

Photo 35: Location 12 – Looking Southwest, Cell 2A Northwester Waste Slope and Anchor Trench

Photo 36: Location 12 – Looking Northeast, Cell 1 Northwestern Waste Slope

Photo 37: Location 13 – Looking Southwest, Cell 1 Northwestern Berm

Photo 38: Location 13 – Looking South, Cell 1 Limit of Industrial Waste (CCR)

Photo 39: Location 14 – Looking East, Cell 3F Industrial Waste (CCR) Valley Fill Over C&D Disposal Area

Photo 40: Location 14 – Looking Southeast, Cell 3F Industrial Waste Valley Fill Over C&D Disposal Area

Photo 41: Location 14 – Looking South, Cell 3F Industrial Waste (CCR) Valley Fill Over C&D Disposal Area